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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/774,606

02/10/2004

Shinya Nakai

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ALEXANDRIA, VA 22320-4850

EXAMINER

VO, NGUYEN THANH

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

12/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/774,606 | Applicant(s) NAKAI, SHINYA | |
| | Examiner NGUYEN VO | Art Unit 2618 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagn (US 2002/0090974 A1) in view of Ikata (5,786,738) and Mandai (US 2002/0030555 A1).

As to claim 6, Hagn discloses a front end module for processing transmission signals and reception signals of a time division multiple access system and transmission signals and reception signals of a code division multiple access system (see figure 5; see also paragraph [0005] which discloses pure FDD such as CDMA, and mixed FDD/TDD mode such as TDMA), the front end module comprising a first separating means (see the diplexer DL1) connected to an antenna A and separating the transmission signals and the reception signals of the time division multiple access system from the transmission signals and the reception signals of the code division multiple access system (see paragraph [0038]; see also paragraph [0005] which discloses pure FDD such as CDMA, and mixed FDD/TDD mode such as TDMA); a second separating means (see the switch US1) connected to the first separating means and separating the transmission signals of the time division multiple access system from the reception signals of the time division multiple access system (see paragraphs [0038]-[0040]); a duplexer (see the duplexer DU1; paragraph [0040]) connected to the

first separating means, including two filters BDU' and BDU", and separating the transmission signals of the code division multiple access system from the reception signals of the code division multiple access system (see paragraphs [0038]-[0040]); and a single multi-layer substrate for integrating the first separating means, the second separating means and the duplexer (see paragraphs [0013], [0057]-[0059]). Hagn fails to disclose that the duplexer includes two acoustic wave elements each of which functions as a filter as claimed. Ikata discloses that a duplexer includes two acoustic wave elements each of which functions as a filter (see column 5 lines 1-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Ikata to Hagn, in order to obtain a duplexer which provides an improved flexibility in terms of the orientation of the external connection terminals (as suggested by Ikata at column 2 lines 47-53).

Still as to claim 6, Hagn as modified by Ikata fails to disclose that the duplexer includes a chip or two chips including the acoustic wave elements and mounted on the multi-layer substrate, and the multi-layer substrate includes components of the duplexer except the acoustic wave elements, as recited in the claim. Mandai discloses that a duplexer 10 (see figure 3) includes a chip or two chips including acoustic wave elements 13 (see paragraphs [0013], [0034]), and mounted on a multi-layer substrate 15, and the multi-layer substrate 15 includes components of the duplexer except the acoustic wave elements (see paragraph [0013], [0034]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Mandai to the modified Hagn, in order to provide a duplexer which is easy to

miniaturize, and has minimized overall loss (as suggested by Mandai at paragraphs [0008], [0054]).

As to claim 7, it is rejected for similar reasons as set forth in claim 6 above. In addition, land La (see Mandai, figure 4A; paragraph [0037]) used to mount the acoustic wave element on the multi-layer substrate 15 reads on "a mounting board" as claimed.

Response to Arguments

3. Applicant's arguments filed 09/16/2008 have been fully considered but they are not persuasive.

Regarding claims 6-7, applicant argues that the rejection to claims 6-7 is improper because the multi-layer substrate 15 in Mandai is a substrate for the duplexer 10 alone, whereas the multi-layer substrate recited in the claims is a substrate for integrating the first separating means, the second separating means and the duplexer. The examiner, however, disagrees. Applicant's arguments are against the references individually. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the primary reference (Hagn) does disclose a multi-layer substrate which is a substrate for integrating the first separating means, the second separating means and the duplexer (see Hagn, paragraphs [0013], [0057]-[0059]). Accordingly, the combination of Hagn and Mandai would clearly result a duplexer including a chip or two chips including the acoustic wave elements and mounted on the multi-layer substrate, and the multi-layer substrate includes

components of the duplexer except the acoustic wave elements (as taught by Mandai),
wherein the multi-layer substrate is a substrate for integrating the first separating means, the second separating means and the duplexer (as taught by Hagn).

For the reasons as set forth above, the examiner contends that the rejection to claims 6-7 is proper.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGUYEN VO whose telephone number is (571)272-7901. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nguyen Vo/
Primary Examiner, Art Unit 2618